2010 Water Quality Report

311 North State Street Concord, NH 03301



Contact Information

The City of Concord welcomes public input on the programs and activities of all of the city departments. We encourage residents to contact their City Councilor, the General Services Director, or the Water Plant Superintendent to express concerns or interest in the operation of the City's water utility. Concord's water supply is managed by the City's General Services Department.

Administrative offices
Main phone number
Normal business hours Monday–Friday 8:00 am to 5:00 pm
Chip Chesley
Dave Brennan

Billing or metering / New water service (603) 225-8693
No or low water pressure / Rusty water (603) 228-2737
Water quality questions, complaints, or testing \dots (603) 225-8696
Service after business hours
Tours of the Water Plant
City website

Water Plant Gets Stimulus Funds

The City of Concord was successful in obtaining \$490,000 in Federal ARRA funding to replace two aging, 125 hp, filter backwash water pumps at the water plant. Replacement of these critical, 30-year-old components was called for in the City's Water Master Plan. The new, more energy efficient pumps are expected to provide the additional benefit of lowering the plant's electricity bill. The funding covers project costs and requires payback of only half of the principal. Construction is scheduled for this summer.



What You Should Know about Drinking Water

The sources of drinking water (both tap water and bottled water) include lakes, rivers, springs and wells. Water by its very nature tends to dissolve and erode the materials in its path as it travels over land or through the ground. As a result, naturally occurring substances as well as contaminants resulting from human activity may be present in our source waters. These contaminants may include:

- Microbes, such as bacteria, protozoa, and viruses, which may come from septic systems, sewage treatment plants, livestock, and wildlife (examples: E. coli, Giardia, Cryptosporidium, Hepatitis A).
- Inorganic chemicals, such as salts and metals, which can be naturally occurring or may result from stormwater runoff, industrial or domestic wastewater, and farming (examples: arsenic, phosphates).
- Volatile Organic Compounds and Synthetic Organic Compounds which originate from industrial discharges, agriculture, gas stations, stormwater runoff, residential uses and septic systems (examples: MtBE, pesticides, herbicides).
- Radioactive contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities (example: radon).

EPA Reminds Us

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

The city takes these risk factors very seriously and monitors the water source and system closely for microbes. Bacterial testing is done every month (50 samples per month), all year long. Twenty-four consecutive months of testing for *Cryptosporidium* and *Giardia* in Penacook Lake was done between July 2005 and July 2007. These organisms were not detected in any of the samples.

Where Does Concord Get Its Water? And How Is It Treated?

Penacook Lake in West Concord has been the city's primary water supply for more than 100 years. The City supplements this supply when necessary by using its pumping station on the Contoocook River. Concord also has a well water supply along the Soucook River, which is managed as an emergency or back-up supply.

Water drawn from Penacook Lake and the Contoocook River passes through the Concord Water Treatment Plant where it is cleaned, filtered, and disinfected in a process known as Conventional Treatment. Fluoride is added, pH and alkalinity adjustments are made and the chlorine disinfectant is converted to longer-lasting monochloramine before the water goes out to homes and businesses. The City's wells are not in regular use, but if activated, the well water would be disinfected, pH and alkalinity adjustments would be made, and fluoride would be added.

Source Water Assessment Report Summary

The NH Department of Environmental Services evaluated community water sources throughout New Hampshire for 14 risk factors that could affect water quality. Examples of these risk factors include; proximity of highways, proximity of known contamination, and percentage of urban land cover. A summary of the 2003 assessment of Concord's three sources is shown below.

Risk Factor Rating	Penacook Lake # of Factors	Contoocook River # of Factors	Well Water # of Factors
High	0	2	2
Medium	1	6	2
Low	11	3	8

The complete Source Assessment Report can be found online at www.des.nh.gov/organization/divisions/water/dwgb/dwspp/dwsap.htm or is available for review at the Concord Water Treatment Plant, 53 Hutchins Street, Concord, NH 03301.

For more information, call Dave Brennan (603) 225-8696.

Level Measured		MCL	MCLG	Meet Limits?	Likely Source	
Table 1. Hutchins Street Water Treatment Plant						
Highest measurement	0.006 mg/L	2 mg/L	2 mg/L	yes	Erosion of natural earth deposits.	
90th percentile # above AL # above AL	0.033 mg/L 0 sites	AL = 1.3 mg/L	1.3 mg/L	yes	Corrosion of household plumbing.	
90th percentile # above AL.	2 μg/L 0 sites	AL = 15 μg/L	0 μg/L	yes	Corrosion of household plumbing.	
Average	0.9 mg/L 0.8 – 1.0 mg/L	4.0 mg/L	4.0 mg/L	yes	Water additive to promote strong teeth.	
Average	2.1 mg/L as chlorine 1.9 — 2.5 mg/L	MRDL = 4 mg/L	MRDLG = 4 mg/L	yes	Water additive used to control microbes.	
Highest Annual Average	36 μg/L 19 – 61 μg/L	80 μg/L as a Running Annual Average	n/a	yes	By-product of drinking water disinfection with chlorine.	
Highest Annual Average	20 μg/L 9 – 41 μg/L	60 μg/L as a Running Annual Average	n/a	yes	By-product of drinking water disinfection with chlorine.	
Average % Removal	36 % 35 – 37 %	TT minimum removal is 26%, or must meet alternate criteria.	n/a	yes	Naturally present in surface waters.	
Highest measurement	0.35 NTU 97%	TT = 1 NTU 95% ≤ 0.3 NTU	n/a	yes	Soil runoff.	
Average	<1 pCi/L <1 – 1 pCi/L	5 pCi/L	0 pCi/L	yes	Erosion of natural earth deposits.	
2009 samples with coliform bacteria detected	1 600 2%	Coliform bacteria in 5% of monthly samples.	0 coliform bacteria found.	yes	Naturally present in the environment.	
rs Station Wells – emergency use o	only			***		
Average	< 1 μg/L ND – 1 μg/L	10 μg/L	0 μg/L	yes	Erosion of natural earth deposits; run off from orchards.	
Average	< 0.006 mg/L ND - 0.006 mg/L	2 mg/L	2 mg/L	yes	Erosion of natural earth deposits.	
Average	< 4 μg/L ND – 4 μg/L	100 μg/L	100 μg/L	yes	Erosion of natural earth deposits.	
Average	< 0.2 mg/L ND – 0.2 mg/L	4 mg/L	4 mg/L	yes	Erosion of natural earth deposits.	
Average	< 1 pCi/L ND – 1 pCi/L	5 pCi/L	0 pCi/L	yes	Erosion of natural earth deposits.	
Average	< 1.1 pCi/L ND – 1.1 pCi/L	15 pCi/L	0 pCi/L	yes	Erosion of natural earth deposits.	
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National Drinking Water Standards

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. The United States Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for the public.

The tables below indicate those regulated contaminants that were found in Concord's water. Table 1 describes Penacook Lake water treated at the Hutchins Street Plant. Table 2 shows test results from the city's wells (the wells were not used during 2009). The tables contain the most recent results up to December 31, 2009. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

What Is Turbidity and Why Do We Measure It?

Turbidity is a term used by scientists and drinking water professionals to describe cloudy water. Lakes and rivers have some normal level of turbidity due to tiny bits of suspended particles such as clay, silt, and algae. Turbidity removal is one of the most important steps in the treatment of drinking water because the particles interfere with microbial disinfection. Public water systems monitor turbidity continuously as an indicator of filter performance. Compliance with federal turbidity standards is required.

"Is our water hard or soft?"

We frequently receive calls from Concord residents asking about particular characteristics of their tap water. The table below may provide some of the answers.

Substance	Average
Alkalinity (as CaCO ₃)	27 mg/L
Aluminum	0.07 mg/L
Calcium	3.9 mg/L
Hardness	14 mg/L (very soft)
Iron	< 0.05 mg/L
Manganese	0.026 mg/L
рН	9.2 units
Sodium	29 mg/L
Chloride	25 mg/L

Want to Learn More about Your Drinking Water?

Contact Dave Brennan at 230-3951 to arrange your tour of the Concord Water Treatment Plant.

DEFINITIONS

MCLG	(Maximum Contaminant Level Goal): The level of a		
	contaminant in drinking water below which there is no		
	known or expected health risk. MCLGs allow for a margin		
	of safety.		

MCL (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using best available treatment technology.

AL (Action Level): The concentration of a contaminant, which if exceeded, triggers treatment or other requirements which a water system must follow.

TT (Treatment Technique): A required process intended to reduce the level of a contaminant in drinking water.

mg/L (milligrams per liter): A unit of concentration also described as Parts per Million.

µg/L (micrograms per liter): A smaller unit of concentration also described as Parts per Billion.

MRDLG (Maximum Residual Disinfectant Level Goal): The level of a drinking water disinfectant below which there is no known risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial growth.

MRDL (Maximum Residual Disinfectant Level): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that the addition of a disinfectant is necessary for control of microbial contaminants.

NTU (Nephelometric Turbidity Units): A measure of the cloudiness of water.

pCi/L (pico curies per liter): A measurement of radioactivity.

THMs Trihalomethanes.

HAA5s Haloacetic Acids.

TOC Total Organic Carbon.

< Less than.

≤ Less than or equal to.

n/a Not applicable.

ND Not Detected.



Cover PhotoA special thanks to Concord's Tree Crew for their assistance in preparing this year's report cover photo.





